UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,614	01/11/2002	Jay P. Hoeflinger	INTL-0664-US	9475

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EXAMINER
NAHAR, QAMRUN

ART UNIT	PAPER NUMBER
2191	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)
	10/044,614	HOEFLINGER ET AL.
	Examiner	Art Unit	
	Qamrun Nahar	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 March 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-30</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-30</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All   b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the amendment filed on 3/7/05.

2.   The objection to the disclosure regarding the "Brief Description of the Drawings" section is withdrawn in view of applicant's amendment.

3.   The rejection under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention to claims 2-3, 10-11, 18-21 and 23-24 is withdrawn in view of applicant's amendment.

4.   Claims 2, 10, 18 and 23 have been amended.

5.   Claims 1-30 are pending.

6.   The objection to the disclosure is pending.

7.   Claims 1-30 stand finally rejected under 35 U.S.C. 102(b) as being anticipated by Poulsen (U.S 5,812,852).

Specification

8.   As pointed out in the last Office Action (Mailed on 12/23/2004, par. 2), the disclosure is objected to because of the following informalities: "Summary of the Invention" section is missing.

        37 C.F.R. 1.73 states "A brief summary of the invention indicating its nature and substance, which may include a statement of the object of the invention, **should** precede the detailed description. Such summary should, when set forth, be commensurate with the invention as claimed and any object recited should be that of the invention as claimed." Therefore, the applicant is requested to submit "Summary of the Invention" section.

Appropriate correction is required.

Response to Amendment

Claim Rejections - 35 USC § 102

9.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10.   Claims 1-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Poulsen (U.S

5,812,852).

Per Claim 1:

The Poulsen patent discloses:

- a method comprising: receiving a first program unit in a parallel computing environment

having a team of parallel threads including at least a first and second thread, the first

program unit including a memory copy operation to be performed between the first thread

and the second thread (column 4, lines 62-67)

- and translating the first program unit into a second program unit, the second program

unit to associate the memory copy operation with a set of one or more instructions, the set

of instructions to ensure that the second thread copies data based, in part, on a first

descriptor associated with the first thread (column 4, line 67 to column 5, lines 1-20; a new

pointer variable is declared for the new compound object, and any reference to the new

compound object is made via the new pointer variable. That is, the new pointer variable is

interpreted as the first descriptor associated with the first thread.).

Per Claim 2 (Amended):

The Poulsen patent discloses:

- further comprising copying an address of the first descriptor to a buffer and copying data

into a memory area associated with the second thread based, in part, on address and data

information associated with the first descriptor (column 5, lines 11-20).

Per Claim 3:

The Poulsen patent discloses:

- further comprising copying data into a memory area associated with second thread

utilizing, in part, a second descriptor associated with the second thread (column 6, lines 64-

67 to column 7, lines 1-6).

Per Claim 4:

The Poulsen patent discloses:

- **further comprising enabling the first thread to copy an address of the first descriptor to a buffer and setting a signal to enable the second thread to copy data associated with the first descriptor to a memory area associated with the second thread** (column 6, lines 64-67 to column 7, lines 1-6).

Per Claim 5:

The Poulsen patent discloses:

- **further comprising enabling the first thread to enter a wait state after the signal is set** (column 6, lines 64-67 to column 7, lines 1-6).

Per Claim 6:

The Poulsen patent discloses:

- **further comprising releasing the first thread from a wait state upon completion of the data copy operation by the second thread** (column 6, lines 64-67 to column 7, lines 1-6).

Per Claim 7:

The Poulsen patent discloses:

- **further comprising enabling the first thread to copy an address the first descriptor to one of two buffer areas** (column 6, lines 64-67 to column 7, lines 1-6).

Per Claim 8:

The Poulsen patent discloses:

- further comprising receiving the first program unit in source code format and translating the first program unit into a second program unit in source code format (column 8, lines 28-39).

Per Claims 9, 10 (Amended), 11-15 & 17:

These are machine-readable medium versions of the claimed method discussed above (claims 1-8, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Poulsen.

Per Claim 16:

This is a machine-readable medium version of the claimed method discussed above, claim 3, wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Poulsen.

Per Claim 18 (Amended):

The Poulsen patent discloses:

- a method comprising: receiving a first program unit in a parallel computing environment and translating the first program unit, in part, into one or more computer instructions, the instructions enabling a second thread in a team of threads to copy data, into a memory area associated with the second thread, from a private memory area associated with a first thread (column 4, line 67 to column 5, lines 1-20)

- and copying an address of a descriptor into a buffer utilized by the second thread, in part, to copy data from the memory area associated with the first thread (column 5, lines 11-20).

Per Claim 19:

The Poulsen patent discloses:

- further comprising creating a descriptor utilized, in part, by the second thread to copy data into the memory area associated with the second thread (column 5, lines 11-14).

Per Claim 20:

The Poulsen patent discloses:

- further comprising setting a signal by the first thread enabling the second thread to copy the data from the memory area associated with the first thread (column 6, lines 64-67 to column 7, lines 1-6).

Per Claim 21:

The Poulsen patent discloses:

- further comprising entering a wait state by the first thread until the second thread copies

the data from the memory area associated with the first thread (column 6, lines 64-67 to

column 7, lines 1-6).

Per Claims 22, 23 (Amended) & 24-28:

These are apparatus versions of the claimed method discussed above (claims 1-6 & 8,

respectively), wherein all claim limitations also have been addressed and/or covered in cited

areas as set forth above, including "a memory including a shared memory location" (column 8,

lines 28-45). Thus, accordingly, these claims are also anticipated by Poulsen.

Per Claim 29:

The Poulsen patent discloses:

- wherein the first descriptor is passed to the first program unit (column 8, lines 46-51).

Per Claim 30:

The Poulsen patent discloses:

- wherein the translation unit translates the first program unit, in part, into a second

program unit in source code format and the second program unit includes the memory

copy operation (column 8, lines 28-39).

Response to Arguments

11. Applicant's arguments filed on 3/7/05 have been fully considered but they are not

persuasive.

In the remarks, the applicant argues that:

a) Claim 1 was rejected over a prior patent to some of the inventors of the present

application.

However, that prior patent does not teach "a set of instructions to ensure that the second

thread copies data based, in part, on a first descriptor associated with the first thread" set forth in

claim 1. Similar language is also contained in claims 9, 18, and 22. Therefore, reconsideration of

the rejection of those claims and the claims dependent thereon is respectfully requested.

The subject material is explained in the specification at page 10, starting at line 20. There,

it is indicated that the parallel threads may execute instructions in block 513, shown in Figure

5B. These instructions cause parallel threads to set up descriptors, such as the descriptor 801 in

Figure 8, and may specify upper and lower bounds of a private array to be copied. In some

embodiments, the parallel threads, after having established their descriptors in block 513, then

call a subroutine shown in Figure 6. The call instruction to call the subroutine, at block 515,

passes a number of variables to the subroutine that may execute the copy routines necessary to

support the copyprivate clause by, in one embodiment, copying data from the single thread's

memory area to other parallel thread's memory areas. The descriptors may define where to copy

data from and where to copy data to in the memory areas shown in Figure 8.

The subroutine, shown in Figure 6, determines whether a single thread or multiple

threads are involved. If the thread is a single thread, it executes the instructions in block 605 by

copying the address of the single thread's descriptor to an active buffer. If multiple parallel

threads are involved, the parallel threads may use the single thread's descriptor to copy the single

thread's data into the other parallel thread's private memory area, as described by the other

parallel thread's descriptors. See the specification at page 12, line 27, through page 13, line 5.

No such operation is anywhere suggested in the prior Poulsen patent. In other words,

there is no teaching that the instructions to ensure that the second thread copies data based, in

part, on a first description associated with the first thread is nowhere suggested. Therefore,

reconsideration of the rejection is respectfully requested.

Examiner's response:

a)   Examiner strongly disagrees with applicant's assertion that Poulsen fails to disclose the

claimed limitations recited in claims 1-30. Poulsen clearly shows each and every limitation in

claims 1-30.

As pointed out in the last Office Action (Mailed on 12/23/2004, par. 9), Poulsen teaches

the set of instructions to ensure that the second thread copies data based, in part, on a first

descriptor associated with the first thread (column 4, line 67 to column 5, lines 1-20; a new

pointer variable is declared for the new compound object, and any reference to the new

compound object is made via the new pointer variable. That is, the new pointer variable is

interpreted as the first descriptor associated with the first thread.).

In response to applicant's argument that the references fail to show certain features of

applicant's invention, it is noted that the features upon which applicant relies (i.e., active buffer)

are not recited in the rejected claim(s). Although the claims are interpreted in light of the

specification, limitations from the specification are not read into the claims. See *In re Van

Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In addition, see the rejection above in paragraph 10 for rejection to claims 1-30.

Conclusion

12.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

13.   Any inquiry concerning this communication from the examiner should be directed to

Qamrun Nahar whose telephone number is (571) 272-3730. The examiner can normally be

reached on Mondays through Fridays from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tuan Q. Dam, can be reached on (571) 272-3695. The fax phone number for the

organization where this application or processing is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QN
June 8, 2005

WEI Y. ZHEN
PRIMARY EXAMINER